

WHAT IS CLAIMED IS

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1. A command processing method comprising the steps of:

10 (a) comparing a start sector of a read or write command received during a sequential process with a sequential process final sector and a sequential process maximum extension sector when the command received does not make a sequential access, by using the sequential process final sector which indicates a sector where the sequential process ends and the sequential process maximum extension sector which indicates an extensible range of the sequential process, when carrying out a read or write sequential process with respect to a recording medium; and

20 (b) continuing the sequential process by queuing the read or write command received into a command queue, when the start sector on the recording medium is located at a position before the sequential process final sector or after the sequential process maximum extension sector as a result of the comparing in said step (a).

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2. A command processing method comprising the steps of:

35 (a) comparing a start sector of a read or write command received during a sequential process with a first pointer and a second pointer when the command received does not make a sequential access, by using the first pointer which indicates a

sequential process final sector where the sequential  
process ends and the second pointer which indicates  
a sequential process maximum extension sector  
indicative of an extensible range of the sequential  
5 process, when carrying out a read or write  
sequential process with respect to a recording  
medium; and

(b) continuing the sequential process by  
queuing the read or write command received into a  
10 command queue, when the start sector on the  
recording medium is located at a position before the  
sequential process final sector or after the  
sequential process maximum extension sector as a  
result of the comparing in said step (a).

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3. The command processing method as  
20 claimed in claim 2, wherein the said step (b)  
continues the sequential process by queuing a read  
command which does not make a sequential access and  
is received during a read sequential process into  
the command queue, if a start sector of the read  
25 command received is located at a position between  
the sequential process final sector and the  
sequential process maximum extension sector as a  
result of the comparing in said step (a).

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4. The command processing method as  
claimed in claim 2, wherein the said step (b)  
35 continues the sequential process by queuing a write  
command which does not make a sequential access and  
is received during a read sequential process into

the command queue, after updating a value of the first pointer to a value which is obtained by subtracting 1 from a start sector number of the write command received, if a start sector of the  
5 write command received is located at a position between the sequential process final sector and the sequential process maximum extension sector as a result of the comparing in said step (a).

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5. The command processing method as claimed in claim 2, wherein the said step (b)  
15 continues the sequential process by queuing a read or write command which does not make a sequential access and is received during a write sequential process into the command queue, after updating a value of the second pointer to a value which is  
20 obtained by subtracting 1 from a start sector number of the read or write command received, if a start sector of the read or write command received is located at a position between the sequential process final sector and the sequential process maximum  
25 extension sector as a result of the comparing in said step (a).

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6. A storage apparatus comprising:  
a comparing section to compare a start sector of a read or write command received during a sequential process with a sequential process final  
35 sector and a sequential process maximum extension sector when the command received does not make a sequential access, by using the sequential process

final sector which indicates a sector where the sequential process ends and the sequential process maximum extension sector which indicates an extensible range of the sequential process, when carrying out a read or write sequential process with respect to a recording medium; and

a processing section to continue the sequential process by queuing the read or write command received into a command queue, when the start sector on the recording medium is located at a position before the sequential process final sector or after the sequential process maximum extension sector as a result of the comparing in said comparing section.

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7. A storage apparatus comprising:

a comparing section to compare a start sector of a read or write command received during a sequential process with a first pointer and a second pointer when the command received does not make a sequential access, by using the first pointer which indicates a sequential process final sector where the sequential process ends and the second pointer which indicates a sequential process maximum extension sector indicative of an extensible range of the sequential process, when carrying out a read or write sequential process with respect to a recording medium; and

a processing section to continue the sequential process by queuing the read or write command received into a command queue, when the start sector on the recording medium is located at a position before the sequential process final sector or after the sequential process maximum extension sector as a result of the comparing in said step comparing

section.

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8. The storage apparatus as claimed in claim 7, wherein the said processing section continues the sequential process by queuing a read command which does not make a sequential access and  
10 is received during a read sequential process into the command queue, if a start sector of the read command received is located at a position between the sequential process final sector and the sequential process maximum extension sector as a  
15 result of the comparing in said comparing section.

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9. The storage apparatus as claimed in claim 7, wherein the said processing section continues the sequential process by queuing a write command which does not make a sequential access and is received during a read sequential process into  
25 the command queue, after updating a value of the first pointer to a value which is obtained by subtracting 1 from a start sector number of the write command received, if a start sector of the write command received is located at a position  
30 between the sequential process final sector and the sequential process maximum extension sector as a result of the comparing in said comparing section.

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10. The storage apparatus as claimed in

claim 7, wherein the said processing section  
continues the sequential process by queuing a read  
or write command which does not make a sequential  
access and is received during a write sequential  
5 process into the command queue, after updating a  
value of the second pointer to a value which is  
obtained by subtracting 1 from a start sector number  
of the read or write command received, if a start  
sector of the read or write command received is  
10 located at a position between the sequential process  
final sector and the sequential process maximum  
extension sector as a result of the comparing in  
said comparing section.

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11. A storage apparatus comprising:  
comparing means for comparing a start sector of  
20 a read or write command received during a sequential  
process with a sequential process final sector and a  
sequential process maximum extension sector when the  
command received does not make a sequential access,  
by using the sequential process final sector which  
25 indicates a sector where the sequential process ends  
and the sequential process maximum extension sector  
which indicates an extensible range of the  
sequential process, when carrying out a read or  
write sequential process with respect to a recording  
30 medium; and

processing means for continuing the sequential  
process by queuing the read or write command  
received into a command queue, when the start sector  
on the recording medium is located at a position  
35 before the sequential process final sector or after  
the sequential process maximum extension sector as a  
result of the comparing in said comparing means.